

at a volume fraction.

23. The process for producing the fuel electrode of the solid oxide fuel cell according to claim 12 wherein said divalent or trivalent metal oxide is one or a combination of plural ones selected from the group consisting of BeO, MgO, CaO, SrO, BaO, Sm₂O₃, Y₂O₃, La₂O₃, Gd₂O₃, Sc₂O₃, Pr₂O₃, Nd₂O₃, Eu₂O₃, Yb₂O₃, Dy₂O₃, and Ho₂O₃.

24. The process for producing the fuel electrode of the solid oxide fuel cell according to claim 12 wherein said cermet has a structure in which surfaces of Ni particles and surfaces of cerium oxide particles containing the divalent or trivalent metal dissolved therein are covered with YSZ containing said transition metal dissolved therein in a form of thin films or fine particles.

25. The process for producing the fuel electrode of the solid oxide fuel cell according to claim 12 wherein said hydrolysis is performed using moisture in air.

26. The process for producing the fuel electrode of the solid oxide fuel cell according to claim 12 wherein as materials of said cermet, cerium oxide powder containing the divalent or trivalent metal dissolved therein, Ni powder and a metallic octylate solution of Ce, Y and Zr are used, and YSZ fine particles containing the transition metal dissolved therein are uniformly dispersed between the cerium oxide particles containing the divalent or trivalent metal dissolved therein and the Ni particles.

27. The process for producing the fuel electrode of the solid oxide fuel cell according to claim 26 wherein an average particle diameter of said Ni particles is 1 μm or more, the average particle diameter of said cerium oxide particles containing the divalent or trivalent metal dissolved therein is 1 μm or more, and the average particle diameter of said YSZ particles containing the transition metal dissolved therein is 1 μm or less.

28. (Delete)

29. (Delete)

30. A fuel electrode of a solid oxide fuel cell comprising a cermet of yttria-

stabilized zirconia (YSZ) containing a transition metal dissolved therein and having electronic conductivity in a fuel electrode operating atmosphere, nickel (Ni), and cerium oxide containing a divalent or trivalent metal dissolved therein.

31. The fuel electrode of the solid oxide fuel cell according to claim 30 wherein said cermet has a structure in which surfaces of Ni particles and surfaces of cerium oxide particles containing the divalent or trivalent metal dissolved therein, uniformly dispersed in the cermet, are covered with YSZ thin films or fine particles containing the transition metal dissolved therein.

32. The fuel electrode of the solid oxide fuel cell according to claim 30 wherein as materials of said cermet, cerium oxide powder containing a divalent or trivalent metal dissolved therein, Ni powder and a metallic octylate solution of Ce, Y and Zr are used, and YSZ fine particles containing the transition metal dissolved therein are uniformly dispersed between the cerium oxide particles containing the divalent or trivalent metal dissolved therein and the Ni particles.

33. The fuel electrode of the solid oxide fuel cell according to claim 32 wherein an average particle diameter of said Ni particles is 1 μm or more, the average particle diameter of said cerium oxide particles containing the divalent or trivalent metal dissolved therein is 1 μm or more, and the average particle diameter of said YSZ particles containing the transition metal dissolved therein is 1 μm or less.